

# Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64



Product: 3014956 - TS PotW Pp solidw. BL 500x29.7 L=12  
Unit: 1 piece  
Manufacturer: Wavin - DE - Westeregeln - verified  
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LCA standard: EN15804+A2 (2019)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 11-08-2022  
End of validity: 11-08-2027  
Verifier: Martijn van Hövell - SGS Search



The TS DOQ is a three-layer pressure pipe made of extremely strong material (PE100-RC N8000). The tube is manufactured by co-extrusion. The protective properties of the material ensure a high degree of reliability.

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - DE - Westeregeln - verified (2020). (☑ = module declared, MND = module not declared).

| A1                                                                           | A2 | A3 | A4  | A5  | B1                                                                                                                    | B2  | B3  | B4  | B5  | B6  | B7  | C1                                                                            | C2 | C3 | C4 | D |
|------------------------------------------------------------------------------|----|----|-----|-----|-----------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-------------------------------------------------------------------------------|----|----|----|---|
| ☑                                                                            | ☑  | ☑  | MND | MND | MND                                                                                                                   | MND | MND | MND | MND | MND | MND | MND                                                                           | ☑  | ☑  | ☑  | ☑ |
| Product stage                                                                |    |    |     |     | Use stage                                                                                                             |     |     |     |     |     |     | End-of-Life stage                                                             |    |    |    |   |
| A1 Raw material supply A2 Transport A3 Manufacturing                         |    |    |     |     | B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment<br>B6 Operational energy use B7 Operational water use |     |     |     |     |     |     | C1 De-construction demolition C2 Transport C3 Waste processing<br>C4 Disposal |    |    |    |   |
| Construction process stage                                                   |    |    |     |     | Benefits and loads beyond the system boundaries                                                                       |     |     |     |     |     |     |                                                                               |    |    |    |   |
| A4 Transport gate to site<br>A5 Assembly / Construction installation process |    |    |     |     | D Reuse- Recovery- Recycling- potential                                                                               |     |     |     |     |     |     |                                                                               |    |    |    |   |

### Environmental impacts and parameters

**GWP-total** = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

### Statement of Confidentiality

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# Results

| Environmental impact | Unit         | A1      | A2      | A3      | A1-A3   | C2      | C3       | C4       | D        | Total   |
|----------------------|--------------|---------|---------|---------|---------|---------|----------|----------|----------|---------|
| GWP-total            | kg CO2 eq    | 1.07E+3 | 4.23E+1 | 2.31E+1 | 1.14E+3 | 1.40E+1 | 4.55E+2  | 7.74E+0  | -7.01E+2 | 9.11E+2 |
| GWP-f                | kg CO2 eq    | 1.06E+3 | 4.23E+1 | 1.88E+1 | 1.13E+3 | 1.40E+1 | 4.55E+2  | 7.74E+0  | -6.98E+2 | 9.04E+2 |
| GWP-b                | kg CO2 eq    | 5.37E+0 | 1.95E-2 | 2.02E+0 | 7.41E+0 | 8.48E-3 | -5.34E-1 | 5.81E-3  | -2.65E+0 | 4.24E+0 |
| GWP-luluc            | kg CO2 eq    | 3.60E-1 | 1.55E-2 | 2.28E+0 | 2.65E+0 | 4.94E-3 | 7.84E-2  | 1.11E-4  | -1.59E-1 | 2.58E+0 |
| ODP                  | kg CFC11 eq  | 3.21E-5 | 9.34E-6 | 2.40E-6 | 4.39E-5 | 3.22E-6 | 1.02E-5  | 1.65E-7  | -3.35E-5 | 2.39E-5 |
| AP                   | mol H+ eq    | 4.06E+0 | 2.45E-1 | 1.13E-1 | 4.42E+0 | 7.95E-2 | 4.29E-1  | 3.94E-3  | -1.93E+0 | 3.00E+0 |
| EP-fw                | kg P eq      | 1.91E-2 | 4.27E-4 | 4.31E-4 | 1.99E-2 | 1.15E-4 | 2.26E-3  | 5.11E-6  | -8.70E-3 | 1.36E-2 |
| EP-m                 | kg N eq      | 6.74E-1 | 8.65E-2 | 2.26E-2 | 7.83E-1 | 2.85E-2 | 1.25E-1  | 2.79E-3  | -3.53E-1 | 5.86E-1 |
| EP-T                 | mol N eq     | 7.68E+0 | 9.53E-1 | 2.29E-1 | 8.86E+0 | 3.14E-1 | 1.37E+0  | 1.60E-2  | -3.93E+0 | 6.63E+0 |
| POCP                 | kg NMVOC eq  | 3.54E+0 | 2.72E-1 | 6.60E-2 | 3.88E+0 | 8.96E-2 | 4.34E-1  | 6.27E-3  | -1.83E+0 | 2.58E+0 |
| ADP-mm               | kg Sb eq     | 1.62E-2 | 1.07E-3 | 5.78E-4 | 1.79E-2 | 3.61E-4 | 1.70E-3  | 3.95E-6  | -4.51E-3 | 1.54E-2 |
| ADP-f                | MJ           | 3.63E+4 | 6.38E+2 | 2.20E+2 | 3.71E+4 | 2.14E+2 | 1.36E+3  | 1.20E+1  | -2.09E+4 | 1.78E+4 |
| WDP                  | m3 depriv.   | 8.55E+2 | 2.28E+0 | 1.31E+2 | 9.89E+2 | 6.58E-1 | 2.67E+1  | 5.52E-2  | -4.07E+2 | 6.10E+2 |
| PM                   | disease inc. | 3.34E-5 | 3.80E-6 | 9.84E-7 | 3.82E-5 | 1.26E-6 | 7.06E-6  | 8.28E-8  | -1.53E-5 | 3.13E-5 |
| IR                   | kBq U-235 eq | 2.55E+1 | 2.67E+0 | 5.72E-1 | 2.87E+1 | 9.37E-1 | 4.10E+0  | 5.62E-2  | -1.26E+1 | 2.12E+1 |
| ETP-fw               | CTUe         | 7.27E+3 | 5.69E+2 | 5.55E+2 | 8.39E+3 | 1.74E+2 | 1.54E+3  | 1.06E+1  | -3.04E+3 | 7.08E+3 |
| HTP-c                | CTUh         | 3.16E-7 | 1.85E-8 | 2.07E-8 | 3.55E-7 | 6.19E-9 | 1.83E-7  | 2.93E-10 | -1.45E-7 | 4.00E-7 |
| HTP-nc               | CTUh         | 7.44E-6 | 6.22E-7 | 5.37E-7 | 8.60E-6 | 2.07E-7 | 2.32E-6  | 6.75E-9  | -3.23E-6 | 7.90E-6 |
| SQP                  | Pt           | 1.43E+3 | 5.54E+2 | 2.03E+1 | 2.00E+3 | 1.83E+2 | 1.09E+3  | 3.09E+1  | -6.64E+2 | 2.64E+3 |
| Resource use         | Unit         | A1      | A2      | A3      | A1-A3   | C2      | C3       | C4       | D        | Total   |
| PERE                 | MJ           | 6.43E+2 | 7.99E+0 | 1.23E+3 | 1.88E+3 | 3.07E+0 | 6.71E+1  | 4.77E-1  | -3.03E+2 | 1.65E+3 |
| PERM                 | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PERT                 | MJ           | 6.43E+2 | 7.99E+0 | 1.23E+3 | 1.88E+3 | 3.07E+0 | 6.71E+1  | 4.77E-1  | -3.03E+2 | 1.65E+3 |
| PENRE                | MJ           | 3.89E+4 | 6.77E+2 | 2.35E+2 | 3.98E+4 | 2.28E+2 | 1.45E+3  | 1.28E+1  | -2.26E+4 | 1.89E+4 |
| PENRM                | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PENRT                | MJ           | 3.89E+4 | 6.77E+2 | 2.35E+2 | 3.98E+4 | 2.28E+2 | 1.45E+3  | 1.28E+1  | -2.26E+4 | 1.89E+4 |
| PET                  | MJ           | 3.95E+4 | 6.85E+2 | 1.46E+3 | 4.17E+4 | 2.31E+2 | 1.52E+3  | 1.33E+1  | -2.29E+4 | 2.06E+4 |
| SM                   | kg           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| RSF                  | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| NRSF                 | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| FW                   | m3           | 1.34E+1 | 7.77E-2 | 3.12E+0 | 1.65E+1 | 2.43E-2 | 7.86E-1  | 1.49E-2  | -6.22E+0 | 1.12E+1 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 5.58E-3 | 1.62E-3 | 3.40E-4 | 7.54E-3 | 5.48E-4 | 2.22E-3 | 1.45E-5 | -6.16E-3 | 4.16E-3 |
| NHWD                              | kg   | 4.19E+1 | 4.05E+1 | 4.31E-1 | 8.28E+1 | 1.33E+1 | 6.69E+1 | 5.31E+1 | -1.71E+1 | 1.99E+2 |
| RWD                               | kg   | 2.29E-2 | 4.19E-3 | 8.14E-4 | 2.79E-2 | 1.46E-3 | 5.19E-3 | 7.88E-5 | -1.17E-2 | 2.29E-2 |
| CRU                               | kg   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| MFR                               | kg   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| MER                               | kg   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| EE                                | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| EET                               | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| EEE                               | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |



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